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(54) **THREE-DIMENSIONAL STRUCTURES AND RELATED METHODS OF FORMING THREE-DIMENSIONAL STRUCTURES**

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See application file for complete search history.

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(57) **ABSTRACT**

The present disclosure provides three-dimensional structures and related methods. The three-dimensional structures may define patterns of positive and negative spaces on opposing surfaces that combine to form the three-dimensional structures. The negative spaces of the patterns may intersect to form apertures through the three-dimensional structures, which may define linear or non-linear paths therethrough. The apertures may be configured to provide desirable characteristics with respect to light, sound, and fluid travel therethrough. Further, the three-dimensional structures may be configured to define desired stiffness, weight, and/or flexibility. The three-dimensional structures may be employed in embodiments including heat sinks, housings, speaker or vent covers, springs, etc.

20 Claims, 25 Drawing Sheets